CLAIMS

1. A PON system, wherein a plurality of optical network units are respectively connected via an optical transmission line to an optical line termination,

the optical line termination comprising:

a database that stores subscriber recognition information and service details according to each subscriber; a unit that, upon detecting a connection of a new optical network unit in performing autonomous ranging, issues a control message that requests the newly connected optical network unit to provide subscriber recognition information and acquires the subscriber recognition information; and a unit that, based on the acquired subscriber recognition information, searches the database and specifies the subscriber and the service details and performs bandwidth setting and connection setting based on the specified service details; and

each of the optical network units comprising:

a unit that holds subscriber recognition information input by a subscriber; and a unit that receives a control message that requests the subscriber recognition information from the optical line termination and issues a response message that notifies the subscriber recognition information.

2. The PON system according to claim 1, wherein the subscriber recognition information is a password that specifies the subscriber, and the control message and the response message are sent and received using a physical layer or a monitor control channel.

3. The PON system according to claim 1, wherein the subscriber recognition information is the subscriber's

address, name, and other subscriber information, and the control message and the response message are sent and received using a monitor control channel.

4. An optical network unit connecting method for a PON system, having a plurality of optical network units that are respectively connected via an optical transmission line to an optical line termination and wherein

the optical line termination prepares a database, in which subscriber recognition information and service details are stored according to each subscriber, and upon detecting the connection of a new optical network unit in performing autonomous ranging, issues a control message that requests the newly connected optical network unit to provide subscriber recognition information,

each of the optical network units holds subscriber recognition information input by a subscriber and, upon receiving a control message that requests the subscriber recognition information from the optical line termination, issues a response message that notifies the subscriber recognition information, and

the optical line termination, searches the database based on the subscriber recognition information acquired from the response message from the optical network unit and thereby specifies the subscriber and the service details and performs bandwidth setting and connection setting based on the specified service details.

5. The optical network unit connecting method according to claim 4, wherein the subscriber recognition information is a password that specifies the subscriber, and the control message and the response message are sent and received using a physical layer or a monitor control

channel.

6. The optical network unit connecting method according to claim 4, wherein the subscriber recognition information is the subscriber's address, name, and other subscriber information, and the control message and the response message are sent and received using a monitor control channel.